Internal auditory meatus

The internal auditory meatus (also meatus acusticus internus, internal acoustic meatus, internal auditory canal, internal acoustic canal, or IAC) is a canal in the petrous bone of the temporal bone of the skull, on each side, and serves as the passageway for the cranial nerves, namely Facial nerve and Vestibulocochlear nerve, and for the labyrinthine artery, between the middle and inner ear.

The differentiation between benign and malign lesions in the cerebellopontine angle (CPA) and IAC is important, as it requires diverse treatment protocols. For the physician this differentiation represents a clinical and radiological challenge. For the developmental research the left-right asymmetry might be a field of research [1)]

Vestibular schwannoma (VS) usually present the widening of internal auditory canal (IAC), and these bony changes are typically limited to IAC, not extend to temporal bone.

In the retrosigmoid approach, the endoscope was beneficial to inspect the internal auditory canal [2)].

A retrospective study of 24 consecutive patients who underwent a Retrosigmoid transmeatal approach for vestibular schwannoma, had a method of fat graft-assisted internal auditory canal (IAC) closure. They assessed rates of postoperative CSF leak (incisional leak, rhinorrhea, or otorrhea), pseudomeningocele formation, and occurrence of meningitis. Twenty-four patients (10 males, 14 females) with a mean age of 47years (range 18-84) underwent fat graft-assisted IAC closure. No lumbar drains were used postoperatively. There were no instances of postoperative CSF leak (incisional leak, rhinorrhea, or otorrhea), pseudomeningocele formation, or occurrence of meningitis. There were no graft site complications. The results demonstrate that autologous fat grafts provide a safe and effective method of IAC defect closure to prevent postoperative CSF leakage after vestibular schwannoma removal via a retrosigmoid transmittal approach [3)].

1)
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2)
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3)
Azad T, Mendelson ZS, Wong A, Jyung RW, Liu JK. Fat graft-assisted internal auditory canal closure after retrosigmoid transmeatal resection of acoustic neuroma: Technique for prevention of cerebrospinal fluid leakage. J Clin Neurosci. 2016 Feb;24:124-7. doi: 10.1016/j.jocn.2015.08.016. Epub 2015 Oct 16. PubMed PMID: 26482457.